(No Model.)

A. BECKERT.

BALANCE VALVE.

No. 352,801. Patented Nov. 16, 1886.

Fig. 1.

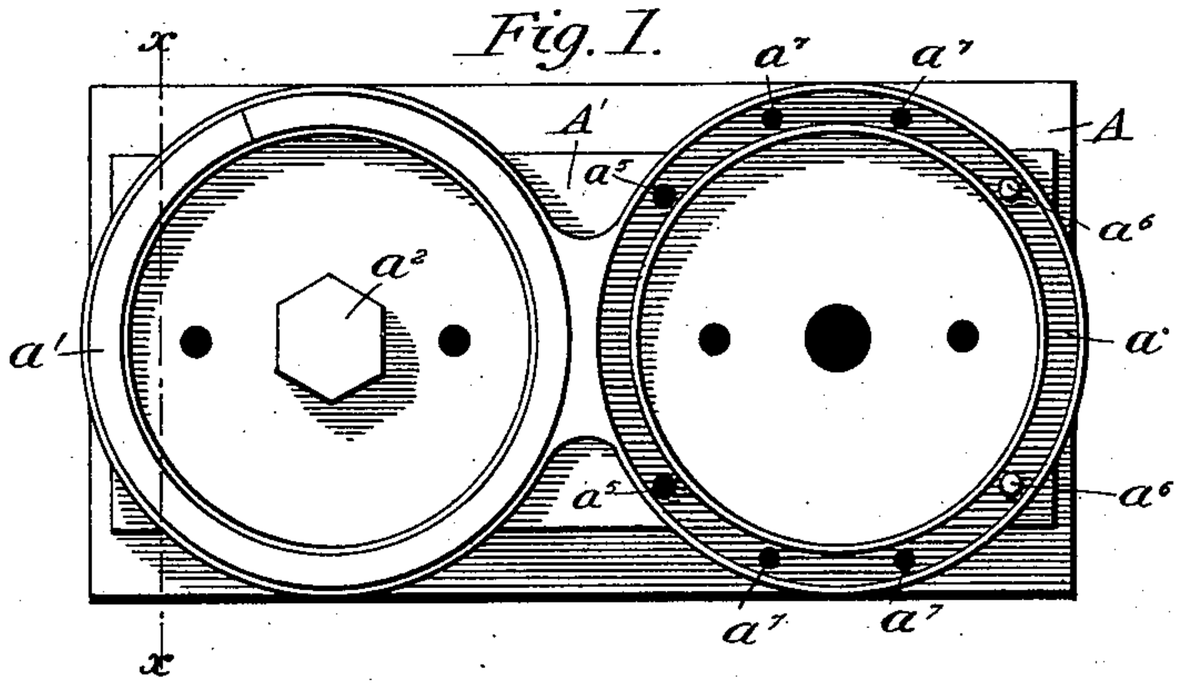


Fig. 2.

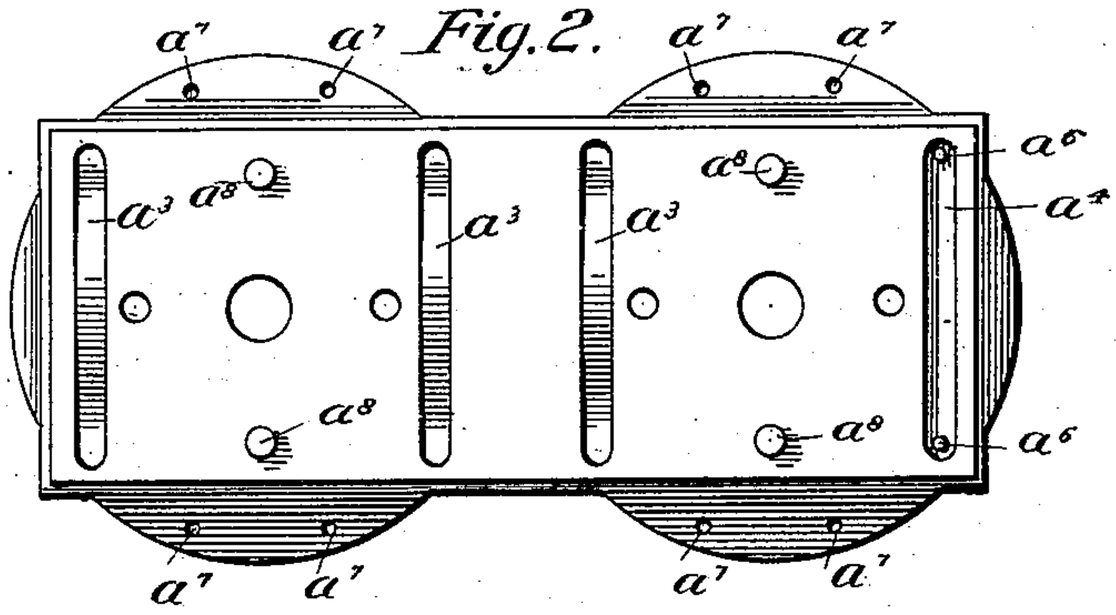


Fig. 3.

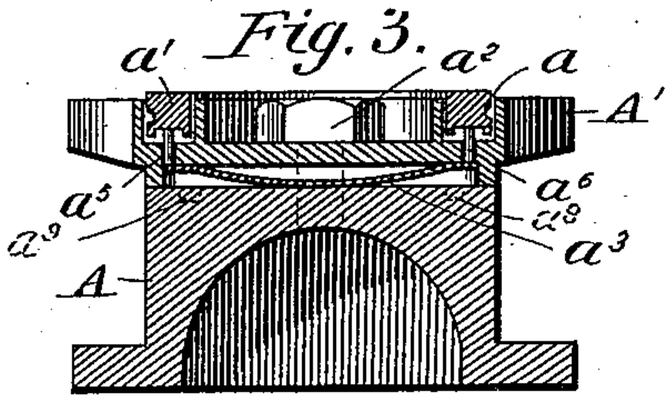


Fig. 4.

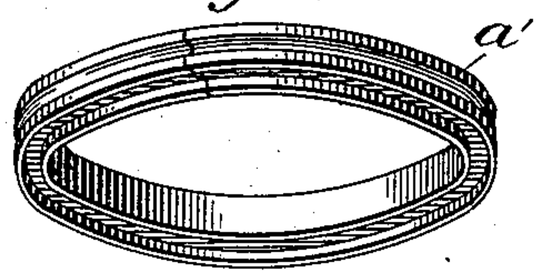
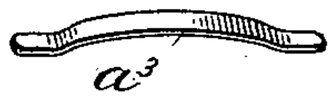


Fig. 5.



Witnesses.

Morris H. Clark

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Atty.

UNITED STATES PATENT OFFICE.

ANDREW BECKERT, OF BALTIMORE, MARYLAND.

BALANCE-VALVE.

SPECIFICATION forming part of Letters Patent No. 352,801, dated November 16, 1886.

Application filed August 18, 1886. Serial No. 211,205. (No model.)

To all whom it may concern:

Be it known that I, ANDREW BECKERT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Balance-Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that form of valve which is shown in my former patent granted the 8th day of September, 1885; and its object is to protect the springs which force the rings against the top plate of the steam-chest from the action of the steam. To accomplish this the springs are inclosed in a steam-tight compartment below the balance-plate, and pins resting upon the springs are projected through the openings formed in the bottom of the balance-ring recess for the purpose of supporting the latter in the same substantial manner as if the rings were resting on the springs shown in the patent aforementioned. By these means the springs are fully protected from the action of the steam and water, and a better valve is produced.

The nature of the invention therefore consists of constructions and combinations, all as will hereinafter be described in the specification, and particularly pointed out in the claims, reference being had to the accompanying drawings.

Figure 1 represents a top plan with one of the rings removed; Fig. 2, a bottom plan of the balance-plate; Fig. 3, a section in line *x x*, Fig. 1; Fig. 4, a perspective of a ring, and Fig. 5 a perspective of the spring.

The valve A, proper, may be constructed in any of the ordinary ways, and it will therefore not be necessary to show or describe the several parts thereof, as they are well known. The balance-plate A′, in the construction shown, has two annular plates formed thereon, which at the sides overlap or overhang the plate A′ and body of the valve. These annular plates are provided with annular recesses *a*, for the balance-rings *a′*, which are inserted therein. The plate is secured to the valve by means of screw-bolts a^2, which pass through the balance-plate and into the top of the valve A. Interposed between the balance-plate and the valve are springs a^3, which are preferably countersunk into either the top of the valve or the bottom of the balance-plate. In the present instance the under side of the balance-plate is provided with long recesses a^4 (which may be either countersunk transversely or longitudinally, those shown, however, being transverse to the plate) for the springs, which may be of elliptical form. At each end of the recesses a^4 is drilled an opening, a^5, for pins a^6, which rest upon the ends of the springs and project into the balance-ring recess *a*, to support the balance-ring above the bottom of the latter, so that steam entering through the openings a^7 of the overhanging part of the annular plate will have full play. If desired, the under side of the plate may be provided with studs a^8, to fit in corresponding stud-openings, a^9, in the top of the valve, to assist the screw-bolts a^2 in holding the balance-plate in place. By this construction I am enabled to completely cover and protect the springs from the action of the steam and to add to the efficiency of the valve when in operation.

What I claim as new is—

1. In a balance-valve, the combination of a valve, a balance-plate secured to the valve and having a balance-ring recess in the top and openings a^5, the balance-ring, the springs located between the valves and the balance-plate, and pins passing through openings a^5 and interposed between the ring and springs, substantially as described.

2. In a balance-valve, the combination of a valve, a balance-plate overhanging the body of the valve and provided with a balance-ring recess having openings a^5 and a^7, the balance-ring, the springs between the balance-plate and the valve, and the pins projecting through said openings a^5 and interposed between the springs and balance-ring, substantially as described.

3. In a balance-valve, the combination of a valve, a balance-plate secured to the valve and having a balance-ring recess, openings a^5 and recesses on the under side, the balance-ring, the springs located in said recesses, and the pins in said openings a^5 and interposed between the springs and balance-rings, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW BECKERT.

Witnesses:

MURRAY HANSON,

WILLIAM H. BERRY.